

Some Lesser Known Ferns from the Western Himalayas, 1. *Cheilanthes anceps* var. *brevifrons*

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Nearly a century ago Blanford (1886) recognized two new species in the *Cheilanthes farinosa* (Forsk.) Kaulf. complex: *C. anceps* Blanf. and *C. grisea* Blanf. Later, Blanford (1888) reduced these species to varieties of *C. farinosa*. Hope (1901), Alston (1956), and Verma (1964) considered these taxa to be species. Panigrahi (1962) regarded the tetraploid occurring in Ceylon as *Aleuritopteris anceps* (Blanf.) Panigr. and the diploid as *A. grisea* (Blanf.) Panigr.

Hope (1900, p. 250) apparently was the first to point out that *C. anceps* had two forms. His specimens, from near Simla in the western Himalayas, although collected at the same time as Blanford's, differed in being smaller, more delicate, and sometimes in having apparently concolorous rhizome scales. This led Hope to comment that his specimens seemed near to *C. farinosa* var. *grisea* (Blanf.) Blanf. These small specimens cannot be *C. grisea*, however, because that species has a naked rachis, always has concolorous, brown scales that are restricted to the stipe bases, and has a crenate or irregularly lobed indusial margin. *Cheilanthes anceps*, on the other hand, is characterized by its lanceolate to oblong-lanceolate fronds, scaly stipes and rachises, and lacerate indusial margins.

Sufficient morphological and cytological differences occur between the two types of *C. anceps* to require their separation into varieties, but I hesitate to assign the rank of species to the two because of certain resemblances between them. In both, bicolorous scales are present on the stipe and rachis, the fronds are more or less lanceolate, and the indusial margin is always lacerate.

Cheilanthes anceps Blanf. var. *anceps*.

Fig. 1.

Fronds 25-48 cm long; stipes 10-20 cm long, 0.75-1.5 mm in diam., with a sulcate stele, approximately equalling the laminae, dark chestnut to almost black, glossy, the stipe scales linear-lanceolate, bicolorous, dark with pale margins; rachis scales similar; laminae 10-24 cm long, (2.5) 3-4.5 cm wide, lanceolate to oblong-lanceolate, thin, not compact, heavily white-waxy beneath, the lowest 2 or more pinna pairs subequal, rather distant; indusia narrow, toothed or lacerate, $n=29$ in material from Darjeeling, eastern Himalayas (Verma in Mehra, 1961).

SPECIMENS CITED:

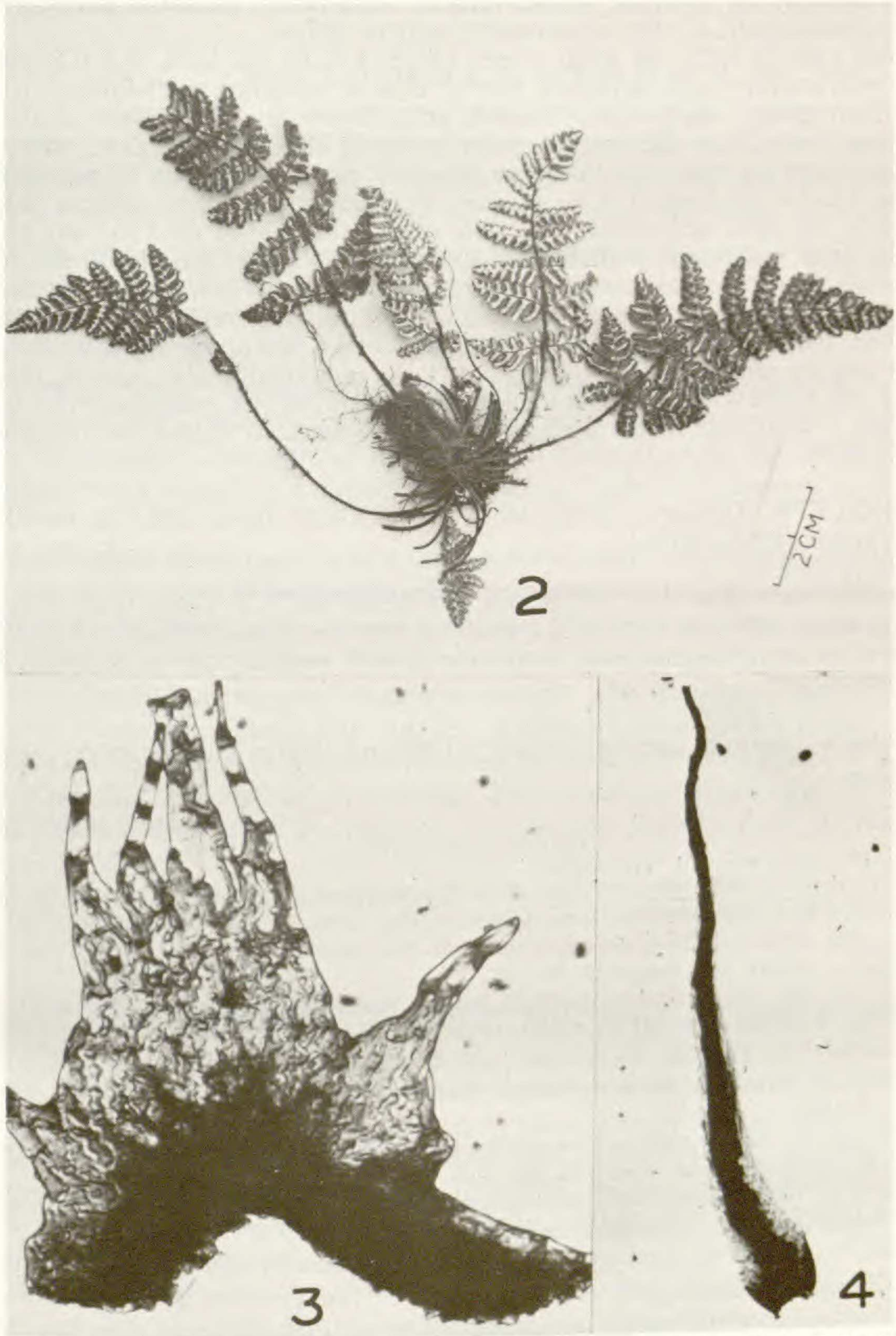
INDIA: Himachal Pradesh: Simla Hills, 650 m, 15 Sept 1960, S. S. Bir (PAN 4266-69). Uttar Pradesh: Mussoorie, Jamna Bridge, 600 m, 27 Aug 1959, S. S. Bir (PAN 2639-40); Nainital, Kathogodam Road, 1200 m, 5 Oct 1975, S. P. Khullar 24 (PAN). West Bengal: Darjeeling, Manjitar-Teesta Road, Aug 1951, S. C. Verma (PAN 3776-3779).

This variety occurs at 600-1800 m altitude in the western Himalayas and at about 150-450 m altitude in the eastern Himalayas.

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FIG. 1. *Cheilanthes anceps* Blanf. var. *anceps* (S. S. Bir, PAN 2639).



FIGS. 2-4. Holotype of *Cheilanthes anceps* var. *brevifrons* (S. P. Khullar, PAN 5977). FIG. 2. Entire specimen. FIG. 3. Indusial lobe showing highly lacerate margin, $\times 38.5$. FIG. 4. Bicolorous stipe scale, $\times 20$.

Cheilanthes anceps var. brevifrons Khullar, var. nov.**Figs. 2-4.**

A *C. anceps* var. *anceps* statura minore, stela tereti, stipitibus pallidioribus, laminis crassiusculis et chromosomatum numero differt.

Fronde (4)9-12.5(27) cm long; stipes (2)3.6-4.7(10) cm long, 0.3-0.8 mm in diam., with a terete stele, generally shorter than or equalling the laminae, light to dark brown, glossy; stipe scales narrowly linear-lanceolate, deciduous, abundant, bicolorous, brown at the center, paler towards the margin, more distinctly bicolorous near the stipe base than near the apex; rachis scales similar but smaller; laminae 5.5-8.0 cm long, 3-3.5 cm wide, thick, compact, more or less oblong-lanceolate, the apex acuminate, the basal pinna pair shorter than the suprabasal pair, the basal basisopic pinnule pair divergent and nearly parallel to the stipe; pinnae subopposite, divergent, the lower 2 or 3 suprabasal pairs equal and distant compared with those in the proximal half of the lamina; pinnules obtuse, ascending, lobed; indusia narrow, generally regularly lobed, not continuous, brown, the margin deeply and regularly lobed with long, marginal teeth; spores brown, globose, the exine with reticulate thickenings appearing like marginal projections, 50-70 $\mu\text{m} \times$ 45-65 μm ; $n=30$ in material from the western Himalayas (Khullar & Mehra, 1973).

HOLOTYPE: Taradevi, Simla, Himachal Pradesh, India, 1800 m, July 1967, S. P. Khullar (PAN 5977).

PARATYPES:

INDIA: Himachal Pradesh: Simla Hills, Kasauli, 1800 m, July 1967, S. P. Khullar (PAN 6053-6068, 6492); Tuti Kundi, 1500 m, 18 Aug 1960, S. S. Bir (PAN 3908-10); Dalhousie, Bathri, 1350 m, 16 Aug 1964, M. Golaknath (PAN 5166, 5291, 5530). **Uttar Pradesh:** Ranikhet, 1800 m, Sept 1972, S. P. Khullar (PAN 22).

This variety is quite common between 1300 and 1800 m altitude in the western Himalayas.

LITERATURE CITED

- ALSTON, A. H. G. 1956. The subdivision of the Polypodiaceae. *Taxon* **5**: 23-25.
- BLANFORD, H. F. 1886. The silver ferns of Simla and their allies. *J. Simla Nat. Hist. Soc.* **1**: 13-22.
- . 1888. A list of the ferns of Simla in the N. W. Himalaya between levels of 4,500 and 10,000 feet. *J. Asiatic Soc. Bengal* **57**: 294-315.
- HOPE, C. W. 1900. The ferns of northwestern India. *J. Bombay Nat. Hist. Soc.* **13**: 236-251.
- KHULLAR, S. P. and P. N. MEHRA. 1973. Cytotaxonomy of W. Himalayan ferns, I. Schizaeaceous series. *Res. Bull. Panjab Univ., n.s.*, **23**: 189-204.
- MEHRA, P. N. 1961. Chromosome numbers in Himalayan ferns. *Res. Bull. Panjab Univ., n.s.*, **12**: 139-164.
- PANIGRAHI, G. 1961. A note on *Aleuritopteris grisea* (Bl.) Panigrahi comb. nov. and *A. anceps* (Bl.) Panigrahi comb. nov. *Bull. Bot. Surv. India* **2**: 321-322.
- VERMA, S. C. 1964. Cytotaxonomic investigations on some E. Himalayan pteroids. Ph.D. thesis, Panjab University, Chandigarh, India.